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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,409	01/02/2004	Takeshi Nomura	396.43380X00	2839

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EXAMINER

KNABLE, GEOFFREY L

ART UNIT PAPER NUMBER

1733

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/749,409

Applicant(s)

NOMURA ET AL.

Examiner

Geoffrey L. Knable

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-12,16 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,10-12 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 6-9 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 4, 5, 10-12 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boon et al. (US 5,036,113) taken in view of Rye et al. (US 4,928,741 - newly cited) and the admitted state of the prior art, and optionally further in view of Fujino<sup>1</sup> et al. (US 2004/0089388 - newly cited).

Boon et al. is applied for substantially the same reasons as set forth in the last office action. As to the auxiliary layer, as noted in the last office action, Boon et al. suggests that an inner liner layer "18" can be provided, it being suggested that this layer can be the conventional butyl innerliner rubber (col. 4, lines 5-8), it being submitted that butyl rubber as used in innerliners (butyl rubber of course being typically and commonly used for tire innerliners precisely for its relatively low permeability) must meet the claimed upper limit on permeability. This conclusion is entirely consistent with applicant's disclosure (in example 9) in which he obtained the claimed permeability using butyl rubber. As to the thickness of this auxiliary layer, Boon et al. does not provide an explicit indication of the thickness for the innerliner layer 18. Boon et al. does however seem to indicate an understanding that the provision of the barrier coating (20) allows the tire weight to be reduced by having a thinned sidewall and that optionally the innerliner 18 can even be omitted (esp. col. 4, lines 13-15; 40-56). Although described in a somewhat confusing manner, it would seem to be a reasonable

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<sup>1</sup> Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

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interpretation of this disclosure that the use of the thin air barrier coating (20) allows the innerliner layer (18) to be thinned or even eliminated, it being submitted that a thickness thereof any where from zero up to the conventional thickness (which seems to be exemplified to be 0.89 mm - col. 4, lines 26-27) would therefore have been suggested. Note further that applicant is considered to have admitted that a conventional inner liner thickness is 1 mm (page 2, line 1 and page 18, lines 1-2 of the specification). Further, the reference to Rye et al. is directed to a very similar technique to improve tire inner liners by providing a thin barrier coating (compare figs. 1-2 of Rye et al. and Boon et al.) and in particular evidences an understanding that with the use of a low permeability barrier coating "it is possible to reduce the thickness of the inner liner or to eliminate it entirely" (col. 2, lines 12-16 of Rye et al.). Taken together, it is considered that these teachings would have motivated the artisan to provide the innerliner layer (18) in Boon et al. to be thinner than conventional (e.g. 1 mm or 0.89 mm) to as small as a zero thickness, the claimed range (0.05mm - 0.5 mm) being well within these teachings and therefore considered obvious.

Fujino et al. has been optionally applied as additional evidence that the ordinary artisan understands the suitability and effectiveness of combining a butyl based auxiliary layer of a thickness consistent with that claimed with a film based barrier layer so as to minimize permeability when cracks form in the film layer - not esp. paragraph [0051] - [0056].

As to new claims 20-21, Boon et al. suggest coating layer thickness as small as 25  $\mu\text{m}$  (col. 4, lines 15-18). As to claim 22, butyl liner materials are selected for their

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ability to retain air pressure and as such, use of such for layer 18 would be expected to retain pressure even if layer 20 cracks. Note also the above noted teachings of Fujino et al.

3. Claims 6-9 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The closest prior art would not teach or render obvious a tire meeting the claim 1 requirements with the additional requirements defined in claim 6, the prior rejection of claims 6-9 and 16 being withdrawn in view of applicant's amendment/arguments as noted below.

4. Applicant's arguments, see amendment, filed 8-14-2006, with respect to the rejection based upon Uchida et al. have been fully considered and are persuasive. The rejection of the claims over Uchida et al. has been withdrawn. The 35 USC 112 rejection has also been withdrawn in view of applicant's amendment.

As to the rejection based upon Boon et al., it is argued that the examiner has provided no evidence or reasoning to conclude that the innerliner 18 of Boon et al. would be expected to meet the claim requirements, especially in view of the function of the innerliner layer in Boon et al. described by applicant as protecting the carcass plies. This argument has been carefully considered but is unpersuasive and seems to be based upon an incomplete description of the reference teachings - that is, the fact that Boon et al. suggest that the layer 18 can be *butyl* is the important feature and what provides the expectation of meeting the claimed permeability. In particular, although not

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preferred, Boon et al. expressly indicates that the inner liner can be *butyl or halobutyl* (col. 4, lines 5-8) as conventionally used for inner liners which of course are well known to possess relatively low permeability, it being submitted (as noted above in the statement of rejection) that butyl rubber as used in innerliners (butyl rubber of course being typically and commonly used for tire innerliners precisely for its relatively low permeability) must meet the claimed upper limit on permeability. This conclusion is entirely consistent with applicant's disclosure (in example 9) in which he obtained the claimed permeability using butyl rubber.

The newly applied references have been added to more fully address the claimed thickness for the auxiliary layer, these now forming part of claim 1. Additionally, with respect to Boon et al., it is noted that applicant has not presented arguments that the claimed skin layer polyurethane is patentably distinguishable from the polyurethane disclosure of Boon et al. as applied in the last office action.

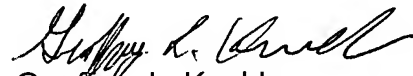
5. Because the thickness requirements were present in original claim 3, the addition of the references to the rejection was not necessitated by amendment and therefore this action has not been made final.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Geoffrey L. Knable  
Primary Examiner  
Art Unit 1733

G. Knable  
October 28, 2006